

10/520,763

**WEST Search History**Hide ItemsRestoreClearCancel

DATE: Friday, November 02, 2007

| <b>Hide?</b>             | <b><u>Set</u><br/><u>Name</u></b>                              | <b><u>Query</u></b>   | <b><u>Hit</u><br/><u>Count</u></b> |
|--------------------------|--|---|------------------------------------|
|                          | <i>DB=PGPB,USPT,USOC,EPAB,JPAB,DWPI,TDBD; PLUR=YES; OP=ADJ</i> |   |                                    |
| <input type="checkbox"/> | L20  | L14 and L19   | 14                                 |
| <input type="checkbox"/> | L19  | L17 or L18  | 7363                               |
| <input type="checkbox"/> | L18  | 428/451.ccls.   | 1566                               |
| <input type="checkbox"/> | L17  | 428/447.ccls.   | 6382                               |
| <input type="checkbox"/> | L16  | L14 and L15   | 51                                 |
| <input type="checkbox"/> | L15  | L1 or L7  | 607459                             |
| <input type="checkbox"/> | L14  | L12 same L13  | 427                                |
| <input type="checkbox"/> | L13  | Methacryl\$20 or acryl\$9 or meth adj acryl\$9  | 874639                             |
| <input type="checkbox"/> | L12  | L10 or L11  | 16697                              |
| <input type="checkbox"/> | L11  | ((Polyhedral or cage) with \$silsesquioxane\$1) or POSS!  | 16696                              |
| <input type="checkbox"/> | L10  | L8 with L9  | 688                                |
| <input type="checkbox"/> | L9   | Cage or polyhedral  | 203636                             |
| <input type="checkbox"/> | L8   | Polysilsesquioxane or polyorganosilsesquioxane or organopolysilsesquioxane or silsesquioxane or octasilsesquioxane  | 7882                               |
| <input type="checkbox"/> | L7   | L2 or L3 or L4 or L5 or L6  | 522712                             |
| <input type="checkbox"/> | L6   | Chromatograph\$6  | 449429                             |
| <input type="checkbox"/> | L5   | Electrochromatograph\$6   | 1185                               |
| <input type="checkbox"/> | L4   | Electrophoresis   | 137989                             |
| <input type="checkbox"/> | L3   | Electrophoretic   | 55396                              |
| <input type="checkbox"/> | L2   | Electroosmotic or electro adj osmotic or electro-osmotic  | 5166                               |
| <input type="checkbox"/> | L1   | Microfluidic or microchip or micro-chip or micro adj chip or microfabricated adj5 chip or microdevice or micro-device or micro adj device or microchannel or micro-channel or micro adj channel | 98106                              |

END OF SEARCH HISTORY

10/520,763

FILE 'CAPLUS' ENTERED AT 10:19:59 ON 02 NOV 2007  
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FILE COVERS 1907 - 2 Nov 2007 VOL 147 ISS 20  
FILE LAST UPDATED: 1 Nov 2007 (20071101/ED)

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=> s Landers, james p?/in  
L1 20 LANDERS, JAMES P?/IN

=> s Ferrance, Jerome p?/in  
L2 9 FERRANCE, JEROME P?/IN

=> s augustine, brian h?/in  
L3 2 AUGUSTINE, BRIAN H?/IN

=> s polefrone joy m?/in  
L4 1 POLEFRONE JOY M?/IN

=> s hughes w? christopher/in  
'?' TRUNCATION SYMBOL NOT VALID WITHIN 'HUGHES W? CHRISTOPHER'  
The truncation symbol ? may be used only at the end of a search term. To specify a variable character within a word use '!', e.g., 'wom!n' to search for both 'woman' and 'women'. Enter "HELP TRUNCATION" at an arrow prompt (=>) for more information.

=> s hughes w christopher/in  
L5 0 HUGHES W CHRISTOPHER/IN

=> s L1 or L2 or L3 or L4 or L5  
L6 22 L1 OR L2 OR L3 OR L4 OR L5

=> s Microfluidic or microchip or micro-chip or micro (w) chip or microfabricated (5W) chip or microdevice or micro-device or micro (w) device or microchannel or micro-channel or micro (w) channel  
8876 MICROFLUIDIC  
1857 MICROFLUIDICS  
9764 MICROFLUIDIC  
(MICROFLUIDIC OR MICROFLUIDICS)  
4471 MICROCHIP  
1289 MICROCHIPS  
4963 MICROCHIP  
(MICROCHIP OR MICROCHIPS)  
177557 MICRO  
313 MICROS  
177855 MICRO

(MICRO OR MICROS)  
 86418 CHIP  
 47457 CHIPS  
 116031 CHIP  
 (CHIP OR CHIPS)  
 198 MICRO-CHIP  
 (MICRO (W) CHIP)  
 177557 MICRO  
 313 MICROS  
 177855 MICRO  
 (MICRO OR MICROS)  
 86418 CHIP  
 47457 CHIPS  
 116031 CHIP  
 (CHIP OR CHIPS)  
 198 MICRO (W) CHIP  
 3213 MICROFABRICATED  
 86418 CHIP  
 47457 CHIPS  
 116031 CHIP  
 (CHIP OR CHIPS)  
 238 MICROFABRICATED (5W) CHIP  
 805 MICRODEVICE  
 883 MICRODEVICES  
 1437 MICRODEVICE  
 (MICRODEVICE OR MICRODEVICES)  
 177557 MICRO  
 313 MICROS  
 177855 MICRO  
 (MICRO OR MICROS)  
 865430 DEVICE  
 654197 DEVICES  
 1241577 DEVICE  
 (DEVICE OR DEVICES)  
 842 MICRO-DEVICE  
 (MICRO (W) DEVICE)  
 177557 MICRO  
 313 MICROS  
 177855 MICRO  
 (MICRO OR MICROS)  
 865430 DEVICE  
 654197 DEVICES  
 1241577 DEVICE  
 (DEVICE OR DEVICES)  
 842 MICRO (W) DEVICE  
 6641 MICROCHANNEL  
 3417 MICROCHANNELS  
 8241 MICROCHANNEL  
 (MICROCHANNEL OR MICROCHANNELS)  
 177557 MICRO  
 313 MICROS  
 177855 MICRO  
 (MICRO OR MICROS)  
 299928 CHANNEL  
 170360 CHANNELS  
 378606 CHANNEL  
 (CHANNEL OR CHANNELS)  
 1560 MICRO-CHANNEL  
 (MICRO (W) CHANNEL)  
 177557 MICRO  
 313 MICROS  
 177855 MICRO  
 (MICRO OR MICROS)

299928 CHANNEL  
170360 CHANNELS  
378606 CHANNEL

(CHANNEL OR CHANNELS)

1560 MICRO (W) CHANNEL

L7 23103 MICROFLUIDIC OR MICROCHIP OR MICRO-CHIP OR MICRO (W) CHIP OR  
MICROFABRICATED (5W) CHIP OR MICRODEVICE OR MICRO-DEVICE OR  
MICRO (W) DEVICE OR MICROCHANNEL OR MICRO-CHANNEL OR MICRO (W)  
CHANNEL

=> d his

(FILE 'HOME' ENTERED AT 10:19:47 ON 02 NOV 2007)

FILE 'CAPLUS' ENTERED AT 10:19:59 ON 02 NOV 2007

L1 20 S LANDERS, JAMES P?/IN  
L2 9 S FERRANCE, JEROME P?/IN  
L3 2 S AUGUSTINE, BRIAN H?/IN  
L4 1 S POLEFRONE JOY M?/IN  
L5 0 S HUGHES W CHRISTOPHER/IN  
L6 22 S L1 OR L2 OR L3 OR L4 OR L5  
L7 23103 S MICROFLUIDIC OR MICROCHIP OR MICRO-CHIP OR MICRO (W) CHIP OR

=> s L6 and L7

L8 15 L6 AND L7

=> s Electroosmotic or electro adj osmotic or electro-osmotic

5135 ELECTROOSMOTIC  
1 ELECTROOSMOTICS  
5135 ELECTROOSMOTIC  
(ELECTROOSMOTIC OR ELECTROOSMOTICS)

88920 ELECTRO  
8 ELECTROS  
88927 ELECTRO  
(ELECTRO OR ELECTROS)

278 ADJ  
56952 OSMOTIC  
25 OSMOTICS  
56963 OSMOTIC  
(OSMOTIC OR OSMOTICS)  
0 ELECTRO ADJ OSMOTIC  
(ELECTRO (W) ADJ (W) OSMOTIC)

88920 ELECTRO  
8 ELECTROS  
88927 ELECTRO  
(ELECTRO OR ELECTROS)

56952 OSMOTIC  
25 OSMOTICS  
56963 OSMOTIC  
(OSMOTIC OR OSMOTICS)

783 ELECTRO-OSMOTIC  
(ELECTRO (W) OSMOTIC)

L9 5736 ELECTROOSMOTIC OR ELECTRO ADJ OSMOTIC OR ELECTRO-OSMOTIC

=> s Electrophoretic

95765 ELECTROPHORETIC  
10 ELECTROPHORETICS

L10 95767 ELECTROPHORETIC  
(ELECTROPHORETIC OR ELECTROPHORETICS)

=> s Electrophoresis

219236 ELECTROPHORESIS  
2 ELECTROPHORESISES

L11 219236 ELECTROPHORESIS  
(ELECTROPHORESIS OR ELECTROPHORESISES)

=> s Electrochromatograph#####  
L12 3847 ELECTROCHROMATOGRAPH#####

=> s Electroosmotic or electro (w) osmotic or electro-osmotic  
5135 ELECTROOSMOTIC  
1 ELECTROOSMOTICS  
5135 ELECTROOSMOTIC  
(ELECTROOSMOTIC OR ELECTROOSMOTICS)  
88920 ELECTRO  
8 ELECTROS  
88927 ELECTRO  
(ELECTRO OR ELECTROS)  
56952 OSMOTIC  
25 OSMOTICS  
56963 OSMOTIC  
(OSMOTIC OR OSMOTICS)  
783 ELECTRO (W) OSMOTIC  
88920 ELECTRO  
8 ELECTROS  
88927 ELECTRO  
(ELECTRO OR ELECTROS)  
56952 OSMOTIC  
25 OSMOTICS  
56963 OSMOTIC  
(OSMOTIC OR OSMOTICS)  
783 ELECTRO-OSMOTIC  
(ELECTRO (W) OSMOTIC)  
L13 5736 ELECTROOSMOTIC OR ELECTRO (W) OSMOTIC OR ELECTRO-OSMOTIC

=> s Chromatograph#####  
425481 CHROMATOGRAPH#####  
650353 CHROMATOG  
3552 CHROMATOGS  
652923 CHROMATOG  
(CHROMATOG OR CHROMATOGS)  
L14 799605 CHROMATOGRAPH#####  
(CHROMATOGRAPH##### OR CHROMATOG)

=> d his

(FILE 'HOME' ENTERED AT 10:19:47 ON 02 NOV 2007)

FILE 'CAPLUS' ENTERED AT 10:19:59 ON 02 NOV 2007

L1 20 S LANDERS, JAMES P?/IN  
L2 9 S FERRANCE, JEROME P?/IN  
L3 2 S AUGUSTINE, BRIAN H?/IN  
L4 1 S POLEFRONE JOY M?/IN  
L5 0 S HUGHES W CHRISTOPHER/IN  
L6 22 S L1 OR L2 OR L3 OR L4 OR L5  
L7 23103 S MICROFLUIDIC OR MICROCHIP OR MICRO-CHIP OR MICRO (W) CHIP OR  
L8 15 S L6 AND L7  
L9 5736 S ELECTROOSMOTIC OR ELECTRO ADJ OSMOTIC OR ELECTRO-OSMOTIC  
L10 95767 S ELECTROPHORETIC  
L11 219236 S ELECTROPHORESIS  
L12 3847 S ELECTROCHROMATOGRAPH#####  
L13 5736 S ELECTROOSMOTIC OR ELECTRO (W) OSMOTIC OR ELECTRO-OSMOTIC  
L14 799605 S CHROMATOGRAPH#####

=> s L10 or L11 or L12 or L13 or L14  
L15 1033890 L10 OR L11 OR L12 OR L13 OR L14

=> s L6 and L15  
L16 9 L6 AND L15

=> s L8 or L16  
L17 18 L8 OR L16

=> s ((Polyhedral or cage) (p) (Polysilsesquioxane# or polyorganosilsesquioxane# or organopolysilsesquioxane# or silsesquioxane# or octasilsesquioxane#)) or POSS

6788 POLYHEDRAL  
18 POLYHEDRALS  
6801 POLYHEDRAL  
(POLYHEDRAL OR POLYHEDRALS)  
24708 CAGE  
10582 CAGES  
32155 CAGE  
(CAGE OR CAGES)  
669 POLYSILSESQUIOXANE#  
114 POLYORGANOSILSESQUIOXANE#  
10 ORGANOPOLYSILSESQUIOXANE#  
12612 SILSESQUIOXANE#  
208 OCTASILSESQUIOXANE#  
1289 (POLYHEDRAL OR CAGE) (P) (POLYSILSESQUIOXANE# OR POLYORGANOSILSE  
SQUIOXANE# OR ORGANOPOLYSILSESQUIOXANE# OR SILSESQUIOXANE# OR  
OCTASILSESQUIOXANE#)  
1145 POSS  
1190 POSSES  
2335 POSS  
(POSS OR POSSES)

L18 2806 ((POLYHEDRAL OR CAGE) (P) (POLYSILSESQUIOXANE# OR POLYORGANOSILS  
ESQUIOXANE# OR ORGANOPOLYSILSESQUIOXANE# OR SILSESQUIOXANE# OR  
OCTASILSESQUIOXANE#)) OR POSS

=> s L17 and L18  
L19 1 L17 AND L18

=> d L19 ibib so abs

L19 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2004:60574 CAPLUS <<LOGINID::20071102>>  
DOCUMENT NUMBER: 140:94920  
TITLE: Hybrid polymers for functional tuning of  
microfluidic device surfaces  
INVENTOR(S): Augustine, Brian H.; Landers, James  
P.; Ferrance, Jerome P.; Polefrone,  
Joy; Hugues, W. Christopher  
PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA; James  
Madison University  
SOURCE: PCT Int. Appl., 43 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|---|------|----------|-----------------|----------|
| WO 2004007582   | A2   | 20040122 | WO 2003-US22162 | 20030715 |
| WO 2004007582   | A3   | 20040325 |                 |          |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,<br>CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,<br>GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,<br>LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, |      |          |                 |          |

PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT,  
 TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW  
 RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
 KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
 FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,  
 BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG  
 AU 2003251935 A1 20040202 AU 2003-251935 20030715  
 US 2006057402 A1 20060316 US 2005-520763 20050110  
 PRIORITY APPLN. INFO.: US 2002-396153P P 20020715  
 US 2002-399633P P 20020730  
 WO 2003-US22162 W 20030715

SO PCT Int. Appl., 43 pp.  
 CODEN: PIXXD2

AB A microfluidic device comprises a body structure provided with a  
 microchannel and an inlet port and an outlet port, wherein the  
 inlet port and outlet port are formed on an exterior surface of the body  
 structure and are in fluid communication with the microchannel,  
 wherein the microchannel has an interior surface that is coated  
 with a polymer comprising Me methacrylate repeating units and acrylate  
 derivs. of polyhedral oligomeric silsesquioxanes. In  
 addition the polymer can be used to coat microchannels to enhance  
 the phys. properties of the microdevice.

=> d L17 not L19  
 L19 IS NOT VALID HERE  
 For an explanation, enter "HELP DISPLAY".

=>

=> s L17 not L19  
 L20 17 L17 NOT L19

=> d L20 1-17 ibib ab so

L20 ANSWER 1 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2007:461540 CAPLUS <<LOGINID::20071102>>  
 DOCUMENT NUMBER: 146:417812  
 TITLE: Integrated microfluidic analysis systems  
 INVENTOR(S): Landers, James P.; Bienvenue, Joan Marie;  
 Legendre, Lindsay Ann; Easley, Christopher J.;  
 Karlinsey, James M.  
 PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA  
 SOURCE: PCT Int. Appl., 52pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.    | KIND   | DATE     | APPLICATION NO. | DATE     |
|---------------|--|----------|-----------------|----------|
| WO 2007047336 | A2   | 20070426 | WO 2006-US39809 | 20061012 |
| WO 2007047336 | A3   | 20070614 |                 |          |
| W:            | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW |          |                 |          |
| RW:           | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,  |          |                 |          |

CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,  
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA

PRIORITY APPLN. INFO.: US 2005-726027P P 20051012

AB The present invention provides an integrated microfluidic anal.  
system. The system contains at least a first (pre-reaction treatment)  
domain for treating a sample prior to subjecting the sample to a chemical  
reaction. The following domains are optionally added to the first domain:  
a second (reaction) domain for reacting the chemical of interest in the  
sample; and a third (post-reaction separation) domain for separating products  
and  
reactants coming out of the reaction domain. The integrated  
microfluidic anal. system of the present invention is most  
applicable to PCR anal.

SO PCT Int. Appl., 52pp.  
CODEN: PIXXD2

L20 ANSWER 2 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:410423 CAPLUS <<LOGINID::20071102>>

DOCUMENT NUMBER: 146:352868

TITLE: Microchip-based acoustic trapping or capture  
of cells for forensic analysis and related method  
thereof

INVENTOR(S): Landers, James P.; Horsman, Katie

PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA;  
Laurell, Thomas; Nilsson, Johan; Nilsson, Mikael

SOURCE: PCT Int. Appl., 32pp.  
CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.    | KIND   | DATE     | APPLICATION NO. | DATE     |
|---------------|--|----------|-----------------|----------|
| WO 2007041671 | A2   | 20070412 | WO 2006-US38943 | 20061004 |
| WO 2007041671 | A3   | 20070614 |                 |          |
| W:            | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,<br>CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,<br>GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP,<br>KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN,<br>MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS,<br>RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ,<br>UA, UG, US, UZ, VC, VN, ZA, ZM, ZW |          |                 |          |
| RW:           | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,<br>IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,<br>CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,<br>GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,<br>KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA   |          |                 |          |

PRIORITY APPLN. INFO.: US 2005-723551P P 20051004

US 2006-776751P P 20060224

AB The present invention provides a method and apparatus for separating by size a  
mixture  
of different size particles using ultrasound. The apparatus contains a  
microchannel having an acoustic transducer thereon. As a mixture of  
cells having different sizes flows down the microchannel, the  
ultrasonic radiation traps cells of desired sizes focused at nodes of a  
standing pressure wave in the microchannel.

SO PCT Int. Appl., 32pp.  
CODEN: PIXXD2

L20 ANSWER 3 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2007:284305 CAPLUS <<LOGINID::20071102>>



DOCUMENT NUMBER: 146:307959  
 TITLE: Microdevices for chemical sensing and chemical actuation  
 INVENTOR(S): Begley, Matthew R.; Landers, James P.; Ferrance, Jerome P.; Huang, Ling; Jones, Michael H.; Monahan-Dian, Jennifer; Utz, Marcel; Barker, Scott  
 PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA  
 SOURCE: PCT Int. Appl., 41pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|---|------|----------|-----------------|----------|
| WO 2007030240   | A2   | 20070315 | WO 2006-US30127 | 20060801 |
| WO 2007030240   | A3   | 20070907 |                 |          |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW |      |          |                 |          |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AP, EA, EP, OA  |      |          |                 |          |

PRIORITY APPLN. INFO.: US 2005-704274P P 20050801  
 US 2006-774293P P 20060216

AB The invention relates to sensors for detecting chemical and biol. material and for chemical actuation. In particular, the sensors of the present invention incorporates membranes or beams that are deformable in the presence of chemical adsorption on its surface. The sensor of the present invention contains a polymeric membrane or beam that is clamped at least at two opposing ends.

SO PCT Int. Appl., 41pp.  
 CODEN: PIXXD2

L20 ANSWER 4 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2007:227424 CAPLUS <<LOGINID::20071102>>  
 DOCUMENT NUMBER: 146:276669  
 TITLE: Passive components for micro-fluidic flow profile shaping and related method thereof  
 INVENTOR(S): Easley, Christopher J.; Karlinsey, James M.; Landers, James P.; Leslie, Dan; Begley, Matthew R.  
 PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA  
 SOURCE: PCT Int. Appl., 61pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.   | KIND | DATE     | APPLICATION NO. | DATE     |
|--|------|----------|-----------------|----------|
| WO 2007024829  | A2   | 20070301 | WO 2006-US32717 | 20060823 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, |      |          |                 |          |

GE, GH, GM, HN, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LA, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MY, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RS, RU, SC, SD, SE, SG, SK, SL, SM, SV, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, ZA, ZM, ZW  
 RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM

PRIORITY APPLN. INFO.: US 2005-710702P P 20050823

AB The microfluidic systems and the flow of fluid are controlled using passive components engineered into the microchannels. These passive flow components include fluidic diodes, fluidic capacitors, and fluidic inductors. Various fluidic circuits are provided to control fluid flow including fluid rectifiers, fluid band pass filters, and fluid timers.

SO PCT Int. Appl., 61pp.  
 CODEN: PIXXD2

L20 ANSWER 5 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2006:917111 CAPLUS <<LOGINID::20071102>>  
 DOCUMENT NUMBER: 145:288104  
 TITLE: DNA extraction using a photo-polymerized monolith in a capillary  
 INVENTOR(S): Wen, Jian; Ferrance, Jerome P.; Landers, James P.  
 PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA  
 SOURCE: PCT Int. Appl., 49pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|---|------|----------|-----------------|----------|
| WO 2006093865   | A1   | 20060908 | WO 2006-US6845  | 20060228 |
| W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KN, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW |      |          |                 |          |
| RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM  |      |          |                 |          |

PRIORITY APPLN. INFO.: US 2005-656998P P 20050228  
 US 2005-740977P P 20051130

AB The present invention is directed to a method of fabricating a grafted, UV photo-polymerized silica-based monolithic column and the use of such column for the extraction of DNA and other biol.-active mols. The method allows for precise placement of the monolithic column in a vessel, such as a capillary, pipet, tube, or microchannel on a microfluidic device (e.g., a microfluidic chip), unlike columns fabricated in such devices through silica bead packing. Furthermore, the method allows for an enhancement of the ability to extract and purify DNA from very low volume samples, in particular, complex or crude biol. samples like blood, using SPE. The method also allows for direct PCR anal. of DNA extracted from the column by eliminating the cleanup steps between extraction and further

downstream processing through the use of minimal vols. of elution reagent.  
3-(Trimethoxysilyl)propyl methacrylate (TMSPM, min. 98 %) and  
tetramethylorthosilicate (TMOS, 98 %) were used to prepare a silica-based  
monolithic column for use in solid phase extraction Extraction of  
pre-purified DNA

and whole blood were performed using the TMSPM/TMOS monolith and the  
QIAamp DNA mini kit (QIAGEN, Valencia, CA).

SO PCT Int. Appl., 49pp.

CODEN: PIXXD2

REFERENCE COUNT: 2 THERE ARE 2 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 6 OF 47 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2006:342773 CAPLUS <<LOGINID::20071102>>

DOCUMENT NUMBER: 144:365934

TITLE: Localized control of thermal properties on  
microdevices and applications thereof

INVENTOR(S): Easley, Christopher J.; Landers, James P.;  
Ferrance, Jerome P.

PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA

SOURCE: PCT Int. Appl., 39 pp.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.    | KIND   | DATE     | APPLICATION NO. | DATE     |
|---------------|--|----------|-----------------|----------|
| WO 2006039293 | A2   | 20060413 | WO 2005-US34674 | 20050929 |
| WO 2006039293 | A3   | 20060511 |                 |          |
| W:            | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH,<br>CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,<br>GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KM, KP, KR, KZ,<br>LC, LK, LR, LS, LT, LU, LV, LY, MA, MD, MG, MK, MN, MW, MX, MZ,<br>NA, NG, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG,<br>SK, SL, SM, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN,<br>YU, ZA, ZM, ZW |          |                 |          |
| RW:           | AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE,<br>IS, IT, LT, LU, LV, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ,<br>CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH,<br>GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,<br>KG, KZ, MD, RU, TJ, TM   |          |                 |          |

PRIORITY APPLN. INFO.: US 2004-614304P P 20040929

AB The present invention relates to microfluidic devices, and in  
particular, heat management in such devices. To achieve desired thermal  
properties in selected areas of a microfluidic or nanofluidic  
device, selective removal or addition of material (thermal mass) can be  
effected in certain selected regions of the device to controlling thermal  
properties. This is particularly useful in accommodating rapid heating  
and/or cooling rates during sample processing and anal. on a  
microfluidic or nanofluidic device.

SO PCT Int. Appl., 39 pp.

CODEN: PIXXD2

L20 ANSWER 7 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2005:961960 CAPLUS <<LOGINID::20071102>>

DOCUMENT NUMBER: 143:225525

TITLE: Method and system for eluting cells

INVENTOR(S): Landers, James P.; Ferrance, Jerome  
P.; Voorhees, Jessica C.; Blasier, Kiev R.

PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA

SOURCE: PCT Int. Appl., 25 pp.

DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.    | KIND   | DATE     | APPLICATION NO. | DATE     |
|---------------|--|----------|-----------------|----------|
| WO 2005079531 | A2   | 20050901 | WO 2005-US5490  | 20050222 |
| WO 2005079531 | A3   | 20061214 |                 |          |
| W:            | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW, SM |          |                 |          |
| RW:           | BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG   |          |                 |          |

PRIORITY APPLN. INFO.: US 2004-546080P P 20040219

AB The present invention relates to method and system for eluting cells from materials for anal. and diagnostic examination by means of a swab, clothing items, or the like. The method includes incubating the cell-containing material in a solution that degrades the material while maintaining the cells or biol. materials of interest, especially polynucleotides, such as DNA and/or RNA, intact. Preferably, the solution contains at least one enzyme for degrading the material. A system for practicing the method is also disclosed.

SO PCT Int. Appl., 25 pp.  
CODEN: PIXXD2

L20 ANSWER 8 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2005:324391 CAPLUS <<LOGINID::20071102>>  
DOCUMENT NUMBER: 142:351721  
TITLE: Method for microchip and capillary detection of proteins in the sub-ug/ml range  
INVENTOR(S): Landers, James P.; Giordano, Braden P.; Jin, Lianji; Burgi, Dean  
PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA  
SOURCE: PCT Int. Appl., 44 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.    | KIND   | DATE     | APPLICATION NO. | DATE     |
|---------------|--|----------|-----------------|----------|
| WO 2005033687 | A1   | 20050414 | WO 2004-US1276  | 20040120 |
| W:            | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW |          |                 |          |
| RW:           | BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG   |          |                 |          |

PRIORITY APPLN. INFO.: US 2003-440929P P 20030117

AB The present invention relates to protein detection and quantification

using microfabricated devices and capillaries. In particular, the present invention provides methods for separation and detection, in a microfabricated device or capillary, of proteins in a sample without requiring pre-or post-column protein labeling or modification for eventual laser-induced fluorescence (LIF) detection. The method comprises performing electrophoresis with a fluorescent dye in the buffer and/or matrix to detectably label the proteins.

SO PCT Int. Appl., 44 pp.

CODEN: PIXXD2

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 9 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:448025 CAPLUS <<LOGINID::20071102>>

TITLE: Isolation of sperm cells from other biological materials using microfabricated devices and related methods thereof

INVENTOR(S): Landers, James P.; Ferrance, Jerome P.; Horsman, Katie Maree

PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA

SOURCE: PCT Int. Appl.

CODEN: PIXXD2

DOCUMENT TYPE: Patent

LANGUAGE: English

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

| PATENT NO.             | KIND   | DATE     | APPLICATION NO. | DATE       |
|------------------------|--|----------|-----------------|------------|
| WO 2004046712          | A2   | 20040603 | WO 2003-US37205 | 20031120   |
| WO 2004046712          | A3   | 20040722 |                 |            |
| W:                     | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW |          |                 |            |
| RW:                    | BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG   |          |                 |            |
| CA 2506935             | A1   | 20040603 | CA 2003-2506935 | 20031120   |
| AU 2003298682          | A1   | 20040615 | AU 2003-298682  | 20031120   |
| EP 1565737             | A2   | 20050824 | EP 2003-796437  | 20031120   |
| R:                     | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR, BG, CZ, EE, HU, SK   |          |                 |            |
| US 2006144707          | A1   | 20060706 | US 2005-535926  | 20051209   |
| PRIORITY APPLN. INFO.: |  |          | US 2002-427734P | P 20021120 |
|                        |  |          | WO 2003-US37205 | W 20031120 |

AB The present invention relates to cell separation using microfabricated devices. In particular, the present invention provides methods and devices for separation of sperm from biological materials, such as other cells and molecular species, in a cell mixture in a microfabricated device through the use of electroosmotic flow, electrophoretic mobility, pressure gradient, differential adhesion, and/or combinations thereof.

SO PCT Int. Appl.

CODEN: PIXXD2

L20 ANSWER 10 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN

ACCESSION NUMBER: 2004:327394 CAPLUS <<LOGINID::20071102>>

TITLE: Methods and systems for multiplexing ir-mediated heating on a microchip

INVENTOR(S): Landers, James P.  
PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA  
SOURCE: PCT Int. Appl.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO.             | KIND   | DATE     | APPLICATION NO. | DATE       |
|------------------------|--|----------|-----------------|------------|
| WO 2004033099          | A2   | 20040422 | WO 2003-US31806 | 20031008   |
| WO 2004033099          | A3   | 20040729 |                 |            |
| W:                     | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW |          |                 |            |
| RW:                    | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG   |          |                 |            |
| AU 2003287029          | A1   | 20040504 | AU 2003-287029  | 20031008   |
| US 2005287661          | A1   | 20051229 | US 2005-530728  | 20050408   |
| PRIORITY APPLN. INFO.: |  |          | US 2002-416927P | P 20021008 |
|                        |  |          | WO 2003-US31806 | W 20031008 |

AB The present invention relates to methods and systems for rapid multiplexed heating of a plurality of small volume samples on a microchip. More specifically, the present invention relates to methods and systems for non-contact temperature cycling of the samples using infrared (IR)-mediated heating of small, micro to nanoliter, volume samples, wherein each cycle can be completed in as little as a few seconds. Depending on the system used, the present invention involves a spinning microchip or an immobile microchip having a plurality of micro-heating areas thereon. In the case of the spinning chip, the micro-heating areas are located in a circular configuration on the chip, so the micro-heating areas can be accessed by static heating source(s) by spinning the microchip. In case of the immobile microchip, fiber optics are used to direct radiation from a heating source or multiple heating sources directly to the micro-heating areas on a microchip.

SO PCT Int. Appl.  
CODEN: PIXXD2

L20 ANSWER 11 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2003:991759 CAPLUS <<LOGINID::20071102>>  
DOCUMENT NUMBER: 140:38372  
TITLE: Apparatus and method for the purification of nucleic acids  
INVENTOR(S): Landers, James P.; Norris, Pamela M.; Power, Mary E.; Ferrance, Jerome P.; Shrinivasan, Sushil; Wolfe, Kelley A.; Breadmore, Michael C.  
PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA  
SOURCE: PCT Int. Appl., 37 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 1  
PATENT INFORMATION:

| PATENT NO. | KIND | DATE | APPLICATION NO. | DATE |
|------------|------|------|-----------------|------|
|------------|------|------|-----------------|------|

WO 2003104774 A1 20031218 WO 2003-US18403 20030611  
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN,  
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH,  
GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR,  
LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NI, NO, NZ, OM,  
PH, PL, PT, RO, RU, SD, SE, SG, SK, SL, TJ, TM, TN, TR, TT, TZ,  
UA, UG, US, UZ, VN, YU, ZA, ZM, ZW  
RW: GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY,  
KG, KZ, MD, RU, TJ, TM, AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES,  
FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR,  
BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG

AU 2003243505 A1 20031222 AU 2003-243505 20030611  
US 2006084185 A1 20060420 US 2004-517980 20041213

PRIORITY APPLN. INFO.: US 2002-387794P P 20020611  
WO 2003-US18403 W 20030611

AB Microfluidic devices for solid-phase extraction of nucleic acids, especially DNA, from samples are described which comprise a body containing a sol-gel matrix-filled microchannel in fluid communication with an inlet port and an outlet port on the exterior of the body. The matrix may addnl. comprise silica particles. Preferably, the sol-gel matrix is prepared using tetramethoxyorthosilicate. The device may be further provided with addnl. components to allow for anal. anal. of the purified nucleic acid sequences. Contacting the biol. sample with a chaotropic agent, loading the sample onto a sol-gel matrix-filled microcolumn under conditions conducive for nucleic acid binding to the column, washing the matrix with a solvent, and releasing the bound nucleic acid from the column. Methods of extracting nucleic acids from samples are also described which entail. Nucleic acid processing systems comprising a sol-gel matrix-filled microchannel in fluid communication with a second microchannel are also described.

SO PCT Int. Appl., 37 pp.  
CODEN: PIXXD2

REFERENCE COUNT: 6 THERE ARE 6 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 12 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2003:408757 CAPLUS <<LOGINID::20071102>>  
DOCUMENT NUMBER: 138:395070  
TITLE: Method for injection and stacking of analytes in high-conductivity samples  
INVENTOR(S): Palmer, James; Landers, James P.  
PATENT ASSIGNEE(S): USA  
SOURCE: U.S., 18 pp.  
CODEN: USXXAM  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

| PATENT NO.    | KIND | DATE     | APPLICATION NO. | DATE     |
|---------------|------|----------|-----------------|----------|
| US 6569305    | B1   | 20030527 | US 1999-418659  | 19991015 |
| US 2003201179 | A1   | 20031030 | US 2003-423339  | 20030425 |
| US 2004035703 | A1   | 20040226 | US 2003-432141  | 20030516 |
| US 7223325    | B2   | 20070529 |                 |          |

PRIORITY APPLN. INFO.: US 1999-418659 A1 19991015  
US 2000-249611P P 20001117  
WO 2001-US43259 W 20011119

AB The present invention is a method for injection and stacking of analytes in high salt samples. This stacking method works with both pressure injection or electrokinetic injection. The ability to stack analytes with electrokinetic injection allows the translation of high-salt stacking from the capillary to the microchip format.

SO U.S., 18 pp.  
CODEN: USXXAM

REFERENCE COUNT: 8 THERE ARE 8 CITED REFERENCES AVAILABLE FOR THIS  
RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 13 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 2002:466287 CAPLUS <<LOGINID::20071102>>  
DOCUMENT NUMBER: 137:27557  
TITLE: Method for orthogonal analyte stacking/injection  
systems in electrophoresis  
INVENTOR(S): Landers, James P.; Palmer, James F.  
PATENT ASSIGNEE(S): University of Virginia Patent Foundation, USA  
SOURCE: PCT Int. Appl., 63 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

| PATENT NO.             | KIND   | DATE     | APPLICATION NO. | DATE        |
|------------------------|--|----------|-----------------|-------------|
| WO 2002048673          | A2   | 20020620 | WO 2001-US43259 | 20011119    |
| WO 2002048673          | A3   | 20020815 |                 |             |
| W:                     | AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, US, UZ, VN, YU, ZA, ZW |          |                 |             |
| RW:                    | GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG   |          |                 |             |
| AU 200241480           | A  | 20020624 | AU 2002-41480   | 20011119    |
| EP 1355858             | A2   | 20031029 | EP 2001-988144  | 20011119    |
| R:                     | AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR   |          |                 |             |
| US 2004035703          | A1   | 20040226 | US 2003-432141  | 20030516    |
| US 7223325             | B2   | 20070529 |                 |             |
| PRIORITY APPLN. INFO.: |  |          | US 2000-249611P | P 20001117  |
|                        |  |          | US 1999-418659  | A2 19991015 |
|                        |  |          | WO 2001-US43259 | W 20011119  |

AB In the present capillary electrokinetic chromatog. method, analytes are injected by electroosmotic flow directly from a sample matrix into a separation buffer containing an electrokinetic vector with an opposite mobility. Analytes can now be injected at the velocity of electroosmotic flow, but are retained at the interface of the sample matrix-co-ion and separation buffer micelle zones as analyte/micelle complexes. Manipulation of the injecting force and opposing stacking force allow greatly increased length or volume of injection. Concns. of the micelle, methanol, and borate in the separation buffer were provided to increase maximum injection length of neutral analytes. Reducing the analyte velocity in the separation buffer without substantially decreasing the velocity of the analyte during injection from the sample vial allowed greatly extended sample plug injection lengths. It is further enabled to inject sample solvent vols. equivalent to about twenty times the effective capillary volume. Equations and algorithms describing the injection process and maximum injection lengths for this mode of stacking in electrokinetic capillary chromatog. are introduced. Use of the present method provides for maximum electrokinetic stacking injection for a wide variety of analytes and separation systems.

SO PCT Int. Appl., 63 pp.  
CODEN: PIXXD2



L20 ANSWER 14 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 2000:508286 CAPLUS <<LOGINID::20071102>>  
 TITLE: Method and apparatus for electronically controlled  
 scanning of micro-areadevices  
 INVENTOR(S): Landers, James P.; Huang, Zhili; Huhmer,  
 Andreas  
 PATENT ASSIGNEE(S): University of Pittsburgh, USA  
 SOURCE: PCT Int. Appl.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE     |
|---|------|----------|-----------------|----------|
| WO 2000043753   | A1   | 20000727 | WO 2000-US1478  | 20000121 |
| W: JP   |      |          |                 |          |
| RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL,<br>PT, SE |      |          |                 |          |
| EP 1149278  | A1   | 20011031 | EP 2000-909943  | 20000121 |
| R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT,<br>IE, FI  |      |          |                 |          |

PRIORITY APPLN. INFO.: US 1999-234549 A 19990121  
 WO 2000-US1478 W 20000121

AB The present invention provides an excitation source (12) which may be used, for example, in conjunction with the scanning of multi-channel electrophoresis chips (18) or capillary arrays. The excitation source (12) is comprised of a source of light (22), such as a laser beam. A beam expander (24), an acousto-optic deflector (28), and a filter (30) are optically aligned with the source of light (22). A driver (32) is connected to the acousto-optic deflector (28) for controlling the angle of deflection. A system is disclosed which includes the excitation source (12), a detector (14) for detecting fluorescence from a target chip (18), and a beam splitter (16) or other device for optically connecting the excitation source (12) to the chip (18) and for optically connecting the chip (18) to the detector (14). The excitation source (12) may be based on an acousto-optic deflector, an electrooptic deflector, a piezoelectric deflector, or any other electronically controlled device. Methods of focusing a beam of collimated light and electronically exciting a plurality of micro-areas of a target chip, either serially or in parallel, are also disclosed.

SO PCT Int. Appl.  
 CODEN: PIXXD2

REFERENCE COUNT: 5 THERE ARE 5 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 15 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1999:761417 CAPLUS <<LOGINID::20071102>>  
 DOCUMENT NUMBER: 132:1806  
 TITLE: Capillary electrophoresis of transferrin  
 glycoforms  
 INVENTOR(S): Landers, James P.; Prasad, Rajani; Oda,  
 Robert P.; Stout, Robert L.  
 PATENT ASSIGNEE(S): USA  
 SOURCE: U.S., 9 pp.  
 CODEN: USXXAM  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 1  
 PATENT INFORMATION:

| PATENT NO.             | KIND | DATE     | APPLICATION NO. | DATE     |
|------------------------|------|----------|-----------------|----------|
| US 5993626             | A    | 19991130 | US 1997-788323  | 19970124 |
| PRIORITY APPLN. INFO.: |      |          | US 1997-788323  | 19970124 |

AB A capillary electrophoresis method for resolving transferrin glycoforms in a sample is described. The capillary comprises a lumen, an inlet and an outlet. The luminal surface of the capillary is charge-neutral and the capillary contains a buffer containing a polymeric matrix. The transferrin sample is contacted with the inlet of the capillary. A voltage is applied to the capillary such that the inlet is a cathode and the outlet is an anode and such that the voltage is effective for resolving transferrin glycoforms. A method for diagnosing chronic alcoholism or carbohydrate-deficient glycoprotein syndrome using CE to resolve abnormal populations of transferrin glycoforms is also described.

SO U.S., 9 pp.  
CODEN: USXXAM

REFERENCE COUNT: 23 THERE ARE 23 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 16 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN  
ACCESSION NUMBER: 1999:495454 CAPLUS <<LOGINID::20071102>>  
DOCUMENT NUMBER: 131:131831  
TITLE: Thermal expansion-induced fluid control for microfluidic devices  
INVENTOR(S): Landers, James P.; Huhmer, Andreas  
PATENT ASSIGNEE(S): University of Pittsburgh, USA  
SOURCE: PCT Int. Appl., 32 pp.  
CODEN: PIXXD2  
DOCUMENT TYPE: Patent  
LANGUAGE: English  
FAMILY ACC. NUM. COUNT: 2  
PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO. | DATE       |
|---|------|----------|-----------------|------------|
| WO 9939120  | A1   | 19990805 | WO 1999-US1831  | 19990128   |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM |      |          |                 |            |
| RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  |      |          |                 |            |
| US 6210882  | B1   | 20010403 | US 1998-15278   | 19980129   |
| AU 9923477  | A    | 19990816 | AU 1999-23477   | 19990128   |
| PRIORITY APPLN. INFO.:  |      |          | US 1998-15278   | A 19980129 |
|   |      |          | US 1998-169886  | A 19981012 |
|   |      |          | WO 1999-US1831  | W 19990128 |

AB A new method is proposed for the precise manipulation of picoliter-nanoliter vols. in microfluidic chips. The technique relies on the thermal expansion of fluids whereby fluid pressure and flow is easily manipulated through control of the fluid temperature. Heat can be efficiently applied in a sample manner using a light/IR source (e.g., a halogen lamp) which selectively heats the fluid in the chip device through absorption of the optical energy in the visible-IR (VIS/IR) portion of the electromagnetic spectrum. Several applications for fluid control and manipulation on microfluidic chips are proposed using the VIS/IR-induced fluid pumping mechanism, including valving.

SO PCT Int. Appl., 32 pp.  
CODEN: PIXXD2

REFERENCE COUNT: 4 THERE ARE 4 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L20 ANSWER 17 OF 17 CAPLUS COPYRIGHT 2007 ACS on STN  
 ACCESSION NUMBER: 1999:495419 CAPLUS <<LOGINID::20071102>>  
 DOCUMENT NUMBER: 131:127371  
 TITLE: Method and apparatus for rapid thermocycling for sample analysis  
 INVENTOR(S): Landers, James P.; Huhmer, Andreas; Oda, Robert P.; Craighead, James R.  
 PATENT ASSIGNEE(S): University of Pittsburgh, USA; Mayo Foundation for Medical Education and Research  
 SOURCE: PCT Int. Appl., 63 pp.  
 CODEN: PIXXD2  
 DOCUMENT TYPE: Patent  
 LANGUAGE: English  
 FAMILY ACC. NUM. COUNT: 2  
 PATENT INFORMATION:

| PATENT NO.  | KIND | DATE     | APPLICATION NO.  | DATE       |
|---|------|----------|--|------------|
| WO 9939005  | A1   | 19990805 | WO 1999-US1834   | 19990128   |
| W: AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, CA, CH, CN, CU, CZ, DE, DK, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MD, MG, MK, MN, MW, MX, NO, NZ, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, UA, UG, UZ, VN, YU, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM   |      |          |  |            |
| RW: GH, GM, KE, LS, MW, SD, SZ, UG, ZW, AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, BF, BJ, CF, CG, CI, CM, GA, GN, GW, ML, MR, NE, SN, TD, TG  |      |          |  |            |
| US 6210882  | B1   | 20010403 | US 1998-15278  | 19980129   |
| AU 9924791  | A    | 19990816 | AU 1999-24791  | 19990128   |
| EP 1051518  | A1   | 20001115 | EP 1999-904387   | 19990128   |
| R: CH, DE, FR, GB, LI   |      |          |  |            |
| US 2001029036   | A1   | 20011011 | US 2001-759892   | 20010112   |
| PRIORITY APPLN. INFO.:  |      |          |  |            |
|   |      |          | US 1998-15278  | A 19980129 |
|   |      |          | WO 1999-US1834   | W 19990128 |
| AB Methods for performing rapid and accurate thermocycling on a sample are disclosed. Use of non-contact heating and cooling sources allows precise temperature control with sharp transitions from one temperature to another to be achieved. A wide range of temps. can be accomplished according to these methods. In addition, thermocycling can be performed without substantial temperature gradients occurring in the sample. Apparatus for achieving these methods are also disclosed. A method for pumping a sample through microchannels on a microchip using a non-contact heat source is also disclosed. PCR-based amplification of DNA using the T-cell receptor $\beta$ -chain system was done in an apparatus having IR-mediated heating and compressed air cooling. |      |          |  |            |
| SO PCT Int. Appl., 63 pp.<br>CODEN: PIXXD2  |      |          |  |            |
| REFERENCE COUNT:  |      | 9        | THERE ARE 9 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT |            |

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